

## CLAIMS

Amend the claims as follows.

1.-6. (Canceled)

7. (Previously presented) An interpolator, comprising:  
a feature extractor to populate a feature table by identifying image features in a pixel array;  
a feature comparator to populate a match table by matching features in the feature table.

8. (Previously presented) The interpolator of claim 7 where the image features are ramps, edges, segments, or noise.

9. (Previously presented) The interpolator of claim 7 where the feature extractor is adapted to be programmable.

10. (Previously presented) The interpolator of claim 7 where the image features are adapted to dynamically change according to user preferences.

11. (Previously presented) The interpolator of claim 7 where the feature extractor includes a state machine for each image feature.

12. (Previously presented) The interpolator of claim 7 where the feature comparator is adapted to match image features in adjacent rows of the pixel array.

13. (Previously presented) The interpolator of claim 7 where the feature comparator is adapted to match image features in adjacent columns of the pixel array.

14. (Previously presented) The interpolator of claim 7 comprising an alignment controller to align matched image features in the match table.

15. (Previously presented) The interpolator of claim 14 where the alignment controller is adapted to compute relative shifts between adjacent rows or columns.
16. (Previously presented) The interpolator of claim 14 where the alignment controller is adapted to identify a transition segment.
17. (Previously presented) The interpolator of claim 14 where the alignment controller is adapted to identify a pivot pixel.
18. (Previously presented) A method for interpolating a target pixel in an array of source pixels comprising:  
populating a feature table by identifying image features in the source pixels;  
populating a match table by matching features in the feature table; and  
generating a target pixel responsive to the matching.
19. (Previously presented) The method of claim 18 where identifying image features includes identifying ramps, edges, segments, or noise.
20. (Previously presented) The method of claim 18 where identifying image features includes identifying programmable image features.
21. (Previously presented) The method of claim 18 where identifying image features includes identifying image features that are dynamically changing according to user preferences.
22. (Previously presented) The method of claim 18 where identifying image features includes using a state machine for each image feature.
23. (Previously presented) The method of claim 18 where matching features in the feature table includes matching features in adjacent rows of the pixel array.

24. (Previously presented) The interpolator of claim 18 where matching features in the feature table includes matching features in adjacent columns of the pixel array.
25. (Previously presented) The method of claim 18 comprising aligning matched image features in the match table.
26. (Previously presented) The method of claim 25 where aligning includes computing relative shifts between adjacent rows or columns.
27. (Previously presented) The method of claim 25 where aligning includes identifying a transition segment.
28. (Previously presented) The method of claim 25 where aligning includes identifying a pivot pixel.
29. (Currently amended) The interpolator of claim 1 where the feature table includes a plurality of pairs ~~wise grouping~~ of numbers, a first number in the pair defining a start position and second number in the pair defining an intensity for each of the image features identified.
30. (Currently amended) The interpolator of claim 1 where the feature comparator is adapted to match like features in adjacent rows or columns of the feature table.
31. (Currently amended) The interpolator of claim 1 where, after a first row of pixel data, the feature comparator is adapted to populate the match table at about the same time as the feature extractor populates the feature table.
32. (Currently amended) The method of claim 18 where populating the feature table includes populating the feature table with a plurality of pairs ~~wise grouping~~ of numbers, a first number in the pair defining a start position and second number in the pair defining an intensity for each image feature identified.

33. (Currently amended) The method of claim 32 where the populating the ~~populating the~~ match table includes matching like features in adjacent rows or columns of the feature table.

34. (Currently amended) The method of claim 32 where the populating the match table occurs at the same time as the populating the feature table and after receiving a first row of pixel data.